

## CLAIMS:

1. A printing system, comprising:  
an inkjet printhead having plural portions each having an ink-ejecting  
nozzle;  
5 plural heater elements each associated with one of said plural portions  
to pre-warm ink dispensed by the nozzle of said associated portion in  
response to a pre-warming signal; and  
a controller configured to generate the pre-warming signal for one or  
more heater elements based on a selection criteria for generating the  
10 pre-warming signal only when the nozzle of said associated portion is  
required to eject ink during an upcoming print swath.

2. The printing system of claim 1, wherein:  
each of said plural portions is configured to dispense a different color  
15 of ink; and  
the controller is configured to analyze which of said different colors of  
ink is required for the upcoming print swath.

3. The printing system of claim 1, wherein the selection criteria is  
20 based upon the type of media to receive ink dispensed from the printhead.

4. The printing system of claim 3, wherein:  
one of said plural portions is configured to dispense ink of a first color  
having a first dye load;  
25 another of said plural portions is configured to dispense ink of the first  
color having a second dye load less than said first dye load;  
said controller is configured to interpret information to determine the  
type of media to receive ink dispensed from the printhead; and  
when a first type of media is determined, said one of said plural  
30 portions is selected for printing and not said another of said plural portions.

5. The printing system of claim 4, wherein said first type of media  
comprises one of plain paper and transparency media.

6. The printing system of claim 1, wherein the selection criteria is based upon a desired print quality of a resulting image formed by ink ejection of selected nozzles.

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7. The printing system of claim 6, wherein:

a first selection provides a first print quality, and a second selection provides a second print quality less than said first print quality;

one of said plural portions is configured to dispense ink of a first color having a first dye load, and another of said plural portions is configured to dispense ink of the first color having a second dye load less than said first dye load;

each portion comprises two groups of nozzles which dispense a single color of ink;

when printing under the first selection, ink is dispensed from both of said one and said another of said plural portions and from said two groups of nozzles thereof; and

when printing under the second selection, ink is dispensed from only one of said two groups of nozzles per portion of the printhead.

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8. A printing system, comprising:

a printhead having plural portions each having an ink-ejecting nozzle located therein;

plural temperature sensors each associated with one of said plural portions to monitor the temperature thereof;

plural heating elements, each associated with one of said plural portions to apply heat thereto in response to a pre-warming signal; and

a controller configured to generate separate pre-warming signals for each of the plural heating elements in response to the plural temperature sensors to elevate the temperature of at least one of said plural portions to a pre-warming temperature.

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9. The printing system of claim 8, wherein the controller is

configured to omit generation of a pre-warming signal for another of said plural portions to produce no pre-warming thereof.

5           10.     The printing system of claim 8, wherein the controller is configured to cease to generate pre-warming signals upon beginning printing.

          11.     The printing system of claim 8, wherein:  
          the controller is configured to continue to generate pre-warming  
          signals after printing has begun;  
10           the plural temperature sensors are configured to continue to monitor printing temperature after printing has begun; and  
          when a printing temperature exceeds the pre-warming temperature, the controller is configured to cease to generate pre-warming signals.

15           12.     The printing system of claim 8, wherein:  
          the controller is configured to analyze which plural portions are required to eject ink during an upcoming print swath;  
          the controller is configured to continue to generate pre-warming  
          signals after printing of said upcoming print swath has begun; and  
20           after ink ejection from one of said plural portions is not required to complete said upcoming print swath, the controller is configured to cease to generate a pre-warming signal therefore.

          13.     A method of pre-warming a multi-color inkjet printhead having  
25           plural portions dispensing ink, including first and second portions, comprising:  
          generating a pre-warming signal for said first portion;  
          pre-warming said first portion in response to the first pre-warming  
          signal; and  
30           omitting generation of a pre-warming signal for said second portion to produce no pre-warming thereof.

          14.     The method of claim 13, further comprising:

analyzing an upcoming print swath;

determining from said analyzing which of said plural portions are a dispensing portion required to dispense ink, and which of said plural portions are a non-dispensing portion not required to dispense ink during printing of said upcoming print swath;

wherein said first plural portion to receive the pre-warming signal comprises the dispensing portion; and

wherein said second portion to receive no pre-warming signal comprises the non-dispensing portion.

15. The method of claim 13, further comprising:

determining a type of media upon which an image is to be printed; and

in response to said determining, selecting which of said plural portions are a dispensing portion required to dispense ink, and which of said plural portions are a non-dispensing portion not required to dispense ink during printing upon said determined type of media;

supplying the pre-warming signal to dispensing portions; and

wherein said omitting comprises omitting generation of a pre-warming signal for the non-dispensing portions.

16. The method of claim 13, further comprising:

monitoring the temperature of each of said plural portions; and

wherein said generating of said pre-warming signal and said omitting generation of a pre-warming signal are conducted in response to said monitoring.

17. The method of claim 13, further comprising:

determining a print quality for printing an upcoming image;

in response to said determining, selecting which of said plural portions are a dispensing portion required to dispense ink, and which of said plural portions are a non-dispensing portion not required to dispense ink during printing of said upcoming image;

supplying the pre-warming signal to dispensing portions; and

wherein said omitting comprises omitting generation of a pre-warming signal for the non-dispensing portions.

5           18.     The method of claim 13, further comprising:  
beginning printing of a print swath; and  
ceasing generation of the pre-warming signal upon said beginning.

10           19.     The method of claim 13, further comprising:  
printing a print swath from a beginning point to an ending point;  
continuing generation of the pre-warming signal after printing from the  
beginning point;  
monitoring printing temperature of each of said plural portions during  
said printing; and  
ceasing to generate the pre-warming signal when the printing  
15     temperature exceeds a threshold temperature before printing to the ending  
point.

20           20.     The method of claim 13, further comprising:  
analyzing an upcoming print swath;  
determining from said analyzing which of said plural portions are  
transitional portions required to dispense ink over an initial segment of said  
upcoming print swath, and not required to dispense ink over a final segment  
of said upcoming print swath; and  
from said determining, continuing generation of the pre-warming signal  
25     for said transitional portions during printing of the initial segment and ceasing  
generation of the pre-warming signal during printing of the final segment.

30           21.     A printing system, comprising:  
means for ejecting ink from plural portions of an inkjet printhead;  
means for heating each of said plural portions in response to a  
pre-warming signal;  
means for generating the pre-warming signal for one of said plural  
portions; and

means for omitting generation of the pre-warming signal for another of said plural portions.

22. The printing system of claim 21, further comprising:

5 means for monitoring the temperature of each of said plural portions;  
and

in response to said means for monitoring, operating said means for generating the pre-warming signal.

23. The printing system of claim 21, further comprising:

10 means for analyzing an upcoming print swath;  
means for sorting which of said plural portions comprise printing portions and which of said plural portions comprise non-printing portions of said upcoming print swath; and  
15 means for delivering the pre-warming signal to the printing portions.

24. The printing system of claim 21, further comprising:

means for determining a type of an upcoming media;  
means for sorting which of said plural portions comprise printing  
20 portions and which of said plural portions comprise non-printing portions when printing upon said upcoming media type; and  
means for delivering the pre-warming signal to the printing portions.

25. The printing system of claim 21, further comprising:

25 means for determining a print quality of an upcoming image to be printed;  
means for sorting which of said plural portions comprise printing portions and which of said plural portions comprise non-printing portions when printing said upcoming image with the determined print quality; and  
30 means for delivering the pre-warming signal to the printing portions.

26. The printing system of claim 21, further comprising:

means for monitoring the printing temperature of each of said plural

portions during printing of a print swath;

means for determining when a pre-warming temperature generated by said means for heating is exceeded by the printing temperature; and

means for ceasing to generate the pre-warming signal when the printing temperature exceeds the pre-warming temperature.

27. The printing system of claim 21, further comprising:

means for determining when said one of said plural portions is required to print during an initial segment of a print swath and is not required to print during a final segment of the print swath; and

means for ceasing generation of the pre-warming signal after printing said initial segment.

28. An ink dispensing apparatus, comprising:

a printhead having plural portions including first and second portions; plural ink-ejecting nozzles at least one of which is located in said first portion, and at least one other of which is located in said second portion;

plural heater elements comprising a first element associated with said first portion, and a second element associated with said second portion;

wherein the first element is configured to pre-warm ink dispensed by nozzles of said first portion in response to a pre-warming signal; and

wherein the second element is configured to fail to pre-warm ink dispensed by nozzles of said second portion when no pre-warming signal is received.

29. The ink dispensing apparatus claim 28, further comprising plural temperature sensors each associated with the least one of said plural portions and configured to monitor the temperature thereof.

30. The ink dispensing apparatus of claim 29, wherein said plural temperature sensors are each configured to generate a temperature signal for use in generating the pre-warming signal.